

ABSTRACT

AVOIDING FIELD OXIDE GOUGING
IN SHALLOW TRENCH ISOLATION (STI) REGIONS

5 A method and device for avoiding oxide gouging in shallow trench isolation (STI)
regions of a semiconductor device. A trench may be etched in an STI region and filled
with insulating material. An anti-reflective coating (ARC) layer may be deposited over
the STI region and extend beyond the boundaries of the STI region. A portion of the
ARC layer may be etched leaving a remaining portion of the ARC layer over the STI
region and extending beyond the boundaries of the STI region. A protective cap may be
10 deposited to cover the remaining portion of the ARC layer as well as the insulating
material. The protective cap may be etched back to expose the ARC layer. However, the
protective cap still covers and protects the insulating material. By providing a protective
cap that covers the insulating material, gouging of the insulating material in STI regions
may be avoided.

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